

Amendments to the Drawings

Formal figures accompany this response as replacement figures for the informal figures currently of record in the application. Each of the replacement figures is identified in accordance with 37 CFR §§1.84(c) and 1.121(d).

The only notable difference between the formal figures and the informal figures is that Figures 6a and 6b are labeled as “prior art” in the formal figures.

REMARKS

The Applicant again thanks the Examiner for his analysis of the pending claims and also for his time during the interview of March 21, 2008 and for the Interview Summary of March 31, 2008 that is hereby acknowledged. Applicant requests reconsideration of the pending claims. Claim 73 is cancelled. Claims 11-22, 59, 65-72 and 74 are currently pending in the application and all stand rejected.

In summary, the most recent office action rejected the pending claims on the following grounds:

1. Claims 11-22, 59, and 68-74 are rejected under 35 U.S.C. 112, first paragraph, as failing to meet the definiteness, written description, and enablement requirements.
2. Independent claims 11, 59, 68-71, and 73 are rejected under 102(b) as anticipated by Sachs (USPN 4,627,887).
3. Claims 17, 20, and 59 as obvious in view of Sachs alone and in view of US patent 4,627,887 (Little).
4. Claim 65 -67 are rejected as anticipated by U.S. patent 5,902,395 (Nagai).

These rejections were addressed during the examiner interview held on March 21, 2008 between the applicants undersigned representatives Sam Petuchowski and Jakub Michna, and Examiners Matthew Song and Robert Kunemund. Below is a description of the substance of the interview pursuant to MPEP 713.04.

1) Rejections Based on 35 U.S.C. 112

Pursuant to the examiner interview, the Examiner has agreed to withdraw the definiteness, written description, and enablement rejections asserted against the claims.

2) and 3) Rejections Based on Sachs, Sachs and Little

The Examiner agreed to withdraw the prior rejections based on Sachs.

4) Rejections Based on Nagai

An agreement on the Nagai rejections was not reached.

5) Finality of Rejection

The Examiner agreed to withdraw the finality of the office action of January 10, 2008 on the condition that the Applicant submit an official response to Examiner's new rejections.

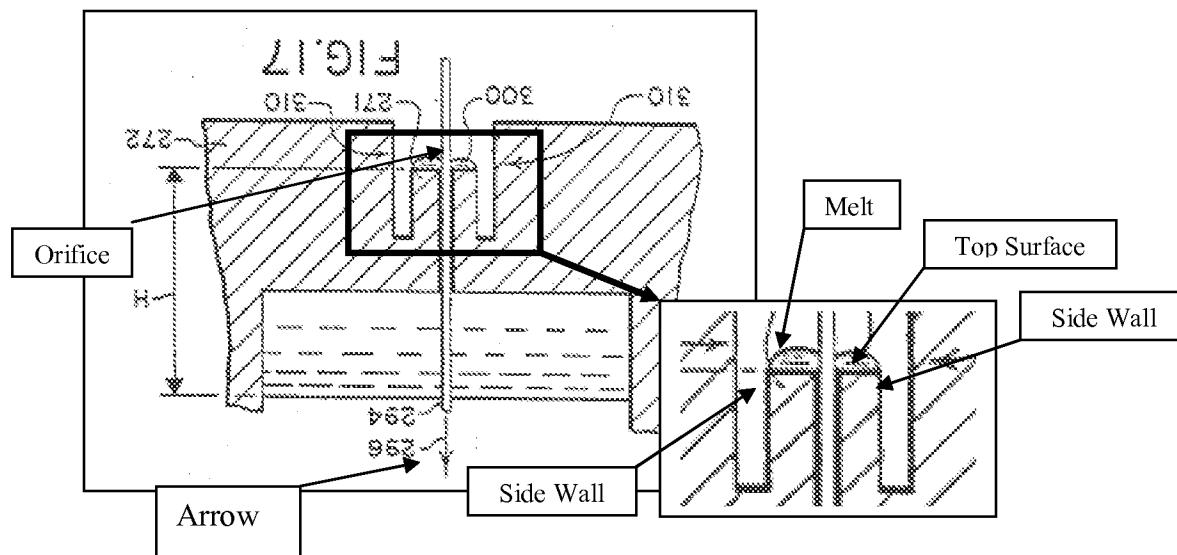
6) Examiner's New Rejections

Although the Examiner withdrew the original rejections over Sachs, the Examiner presented new rejections over Sachs in light of a new interpretation of Figure 17. The Examiner's position is that Figure 17, when viewed upside down, teaches a flat surface with sidewalls extending in a downward direction. Also, the top surface holds the melt (300) by capillary attachment. The Examiner withdrew the old rejection based on Sachs and replaced them with rejections based on this new interpretation of the Sachs reference. The response to this new interpretation is presented below.

Response to Examiner's New Rejections

Claim 11 of the present application is directed to an apparatus for forming crystalline ribbon. The claim requires a crucible with a top surface that supports "substantially all of a melt of a source material" and "a pair of sidewalls extending downward from the opposing edges of the top surface." The opposing edges of the crucible are "formed to retain substantially all of the melt by capillary attachment to the top surface." As now amended, the claim also requires "a puller for drawing the crystalline ribbon from the melt and away from the crucible body and top surface thereof."

The Examiner argues that, viewed upside down, Sachs' Figure 17 teaches the claimed invention. *See figure below.* More particularly, the Examiner argues that the orifice at the crucible bottom, as depicted in detail below, teaches a top surface that supports a melt and has downwardly extending sidewalls from opposing edges of the top surface.



However, Sachs does not teach a “puller for drawing the crystalline ribbon from the melt and away from the crucible body and top surface,” as now required by the amended claims.¹ Indeed, as indicated by the arrow above (296), the Sachs reference teaches pulling a string towards the “top” surface (if Figure 17 is inverted) and into the crucible body. *See Col. 16, lines 13-15 and Figure 22.* Thus, claim 11 is allowable even over the Examiner’s new interpretation of Sachs because Sachs does not teach pulling a crystalline ribbon away from the crucible body and top surface. In a similar manner, independent claims 59 and 68-71 define a similar crucible and, thus, are allowable for the same reasons. Claims 12-22, 72, and 74 depend from either

¹ See page 9, line 16 – page 10, line 7 of the specification, for a description of the “puller” feature.

claim 11 or 71 and, thus, are allowable for the same reasons. Claim 65 was rejected over Nagai, but as amended it now requires a crucible similar to the one defined in claim 11. Thus, claim 65 and depending claims 66 and 67 are allowable for the same reasons.

All of the claims are in condition for allowance and, accordingly, issuance of a notice of allowance is requested. To further expedite prosecution, the Examiner may call Jakub Michna at 617-443-9292 if he has any further questions. If additional fees are required, please charge deposit account number 19-4972.

Respectfully submitted,

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